

1. A system for operating a vessel comprising :

at least one closure transport for removing a vessel closure from an opening in the vessel,
the closure transport remotely operable;

at least one joint connector for sealing or unsealing the vessel, the joint connector
remotely operable;

at least one removal system for allowing material to be emptied from the vessel, the
removal system remotely operable.

2. A clamping system comprising :

a plurality of clamp segments, the clamp segments movable from a first position to a
second position and vice versa, whereby the clamping apparatus is put into an open state when
the clamp segments are in the first position, and put into a closed, clamping state when the clamp
segments are in the second position;

wherein the clamping segments have an energized state when storing energy and a free
state when not storing energy, the energized state being associated with either the first position or
second position, and the free state being associated with the other;

the clamp segments adapted for and conjoined by segment fasteners, the segment
fasteners comprised of segment fastener elements, the segment fasteners adapted to be lockable
for storing energy within the clamp segments;

the clamp segments conjoined such that the failure of any single segment fastener
elements will not unconjoin the clamp segments or cause failure of the apparatus;

one or more actuatable powered drive members for applying energy to the clamp segments
and adapted to energize the segment fasteners,

the drive members operable from a location separated by distance from the apparatus.

3. The system of claim 1 wherein the system is adapted to interface at least one structural
unit.

4. The system of claim 3 wherein the structural unit is a coke drum or joined to a coke drum.

5. An apparatus for closing and sealing a vessel, the vessel having an opening, the apparatus comprising :

a clamping device comprising :

a plurality of clamp segments, the clamp segments movable from a first position to a second position and vice versa, whereby the clamping apparatus is put into an open state when the clamp segments are in the first position, and put into a closed, clamping state when the clamp segments are in the second position;

wherein the clamping segments have an energized state when storing energy and a free state when not storing energy, the energized state being associated with either the first position or second position, and the free state being associated with the other;

the clamp segments adapted for and conjoined by segment fasteners, the segment fasteners comprised of segment fastener elements, the segment fasteners adapted to be lockable for storing energy within the clamp segments;

the clamp segments conjoined such that the failure of any single segment fastener elements will not unconjoin the clamp segments or cause failure of the apparatus;

one or more actuatable powered drive members for applying energy to the clamp segments and adapted to energize the segment fasteners,

the drive members operable from a location separated by distance from the apparatus; and

a vessel closure adapted to fit the clamping unit, for sealing the vessel opening when the clamping unit is engaged in the first closed position.

6. The apparatus of claim 5 further comprising :

a vessel penetrating tool adapted for placement within the vessel through the vessel opening;

whereby the vessel penetrating tool is adapted to seal the vessel when the clamping unit is engaged in the closed position.

7. An apparatus for guiding material from a vessel comprising :

a working surface having a surface opening;

3 at least one opening cover at least partially covering the surface opening and movably
4 attached to the working surface;
5 a chute movably stored on a side of the working surface opposite the vessel when in an
6 undeployed position;
7 an actuator, connected to the chute, for moving the chute from the undeployed position to
8 a deployed position, and vice versa, wherein the chute forms a passage from an opening in the
9 vessel through the surface opening,
10 whereby the deploying and undeploying of the chute deploys and decommissions the
11 opening covering.

8. An apparatus for guiding material from a vessel comprising :

2 a working surface having a surface opening;
3 a chute movably stored on a side of the working surface opposite the vessel when in an
4 undeployed position;
5 at least one opening cover at least partially covering the surface opening and movably
6 attached to the working surface;
7 an actuator, connected to the opening cover, for moving the opening cover to and away
8 from the surface opening,
9 whereby the moving of the opening cover transitions the chute from the undeployed
10 position to a deployed position, and vice versa, wherein the chute forms a passage from an
11 opening in the vessel through the surface opening.

9. An apparatus for guiding material from a vessel comprising :

2 a chute;
3 one or more cords adapted to be attached to the chute for deploying or undeploying the
4 chute;
5 one or more actuators for applying a force to the chute for either deploying or
6 undeploying the chute.

10. The apparatus of claim 9, further comprising :

2 a deck containing an aperture, whereby the chute is able to translate through the aperture
3 upon being deployed or undeployed by the actuator;
4 at least one floor plate movingly attached to the deck and positioned to at least partially
5 cover the aperture;
6 whereby the deploying and undeploying of the chute opens and closes, respectively, the
7 floor plate.

11. An apparatus for guiding material from a vessel comprising :

2 a chute;
3 one or more actuators for applying a force to the chute, whereby the force either deploys
4 or undeploys the chute;
5 a working surface containing an aperture, whereby the chute is able to translate through
6 the aperture upon being deployed and undeployed by the actuator;
7 at least one floor plate movingly attached to the deck and positioned to at least partially
8 cover the aperture;
9 whereby the deploying and undeploying of the chute opens and closes, respectively, the
10 floor plate.

12. An apparatus for guiding material from a vessel comprising :

2 a chute;
3 a working surface containing an aperture, whereby the chute is able to translate through
4 the aperture;
5 one or more floor supports movingly attached to the working surface and positioned over
6 the aperture;
7 one or more actuators for applying a force to the floor supports, whereby the force moves
8 the floor supports relative to the working surface;
9 the floor supports connected to the chute, whereby the movement of the floor supports
10 deploys or undeploys the exit chute from the aperture.

13. An apparatus for guiding material from a vessel, the apparatus comprising :

2 a working surface having an opening;
3 a plurality of overlapping remotely operable floor plates at least partially covering the
4 opening and movably attached to the working surface;
5 an actuator for remotely opening and closing the floor plates, whereby when the floor
6 plates are opened the floor plates create a diversion barrier for a flow of material from the vessel.

14. The apparatus of claim 13, wherein the opened floor plates form a passageway for material to pass between the vessel and the working surface.

15. An apparatus for removing a closure from a vessel, the apparatus comprising :

2 a table for supporting the closure;
3 a movement mechanism attached to the table for moving the table;
4 a guiding mechanism for guiding the table to and from the vessel.

16. The apparatus of claim 15 the table further comprising :

a restraint for restraining and securing the closure to the table.

17. An apparatus to connect or disconnect a first and second structural unit, both structural units having flanged hub ends and longitudinal axes, the apparatus comprising :

3 a clamping device for securing the first structural unit and the second structural unit;
4 a clamp mover attached to the clamping device and movably attached to the first
5 structural unit for translating the clamping device substantially along the longitudinal axis of the
6 first structural unit;
7 an aligner, attached to the first structural unit and the clamping device, whereby the
8 aligner aligns the clamping device with the first structural unit in a position whereby the
9 clamping device will capture and secure the first structural unit.

18. An apparatus to connect or disconnect a first and second structural unit, both structural units having flanged hub ends and longitudinal axes, the apparatus comprising :

3 a clamping device for securing the first structural unit and the second structural unit;

4 a clamp mover attached to the clamping device and movingly attached to the first
5 structural unit for translating the clamping device substantially along the longitudinal axis of the
6 first structural unit;

7 an aligner, attached to the first structural unit and the clamping device, whereby the
8 aligner aligns the clamping device with the second structural unit in a position whereby the
9 clamping device will capture and secure the second structural unit.

19. An apparatus to transfer heat to or from a preloading mechanism in a joint connector, the
2 apparatus comprising :

3 a heat transfer medium source thermally connected to the preloading mechanism;

4 a heat transfer medium transfer mechanism to transferring a heat transfer medium to the
5 preloading mechanism,

6 thereby heating or cooling the preloading mechanism.

20. An apparatus for connecting a first and second structural unit comprising :

2 a joint connector for connecting the first and second structural unit;

3 a heat transfer medium source thermally connected to the joint connector;

4 a transfer mechanism for transferring a heat transfer medium from the heat transfer
5 medium source to the joint connector,

6 whereby heat transfer between the heat transfer medium and the joint connector produces
7 an actuating force for connecting or disconnecting the first and second structural units.